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# VALIDATION OF A DUTCH VERSION OF THE TFI IN A TERTIARY REFERRAL TINNITUS CLINIC

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### Introduction

In recent years, the Tinnitus Functional Index has received increasing interest and has shown good qualities, both for clinical and research purposes (Meikle et al., 2012). Furthermore, research has shown the TFI to be responsive to treatment-related changes, which was one of the main purposes of the instrument (Henry et al., 2015). Our study presents the results of the validation of a Dutch version of the TFI in a population of tinnitus patients seen in a multidisciplinary outpatient clinic.

### Method

The original TFI was translated by means of a translation-back translation procedure. The Dutch version of the TFI was administered to a group of consecutive tinnitus patients, who visited a tertiary referral tinnitus clinic. The self-report questionnaire consisted of the TFI, THI, HADS, Cantril's ladder, and RAND-36. In total, 377 patients (aged 55 ± 14; 61% male) were included.

### Results

The internal consistency of most of the subscales as well as the total TFI was good (Cronbach's alpha .72-.96, see table 1). With respect to convergent validity, the results showed significant correlations ( $r = .44-.79$ , see table 3) between all TFI subscales and related subscales of THI and psychological functioning. Low to modest correlations ( $r = .15-.41$ , see table 3) were found for TFI subscales sleep and auditory with psychological functioning, which is indicative of a satisfactory divergent validity. However, the subscale cognitive was stronger related to QoL, anxiety and depression scores. Furthermore, all divergent correlations were significant, showing only a modest divergent validity.

### Discussion

Overall, the Dutch version of the TFI has shown good qualities with respect to the internal consistency and convergent validity. However, the divergent validity was less convincing, although the divergent correlations were consistent with earlier findings by Meikle et al. (2012). These lower, though significant divergent correlations are most likely the result of a large study sample.

TABLE 1. Internal Consistency scores of the Dutch version of the TFI

Tinnitus Functional Index	N	Items	Cronbach's Alpha
Intrusive	356	3	.82
Sense of Control	359	3	.72
Cognitive	362	3	.92
Sleep	369	3	.96
Auditory	361	3	.95
Relaxation	366	3	.94
Quality of Life	360	4	.89
Emotional	363	3	.90
Total	309	25	.95

TABLE 2. Expected convergent and divergent correlations between TFI, THI, and measures of psychological functioning

TFI	THI Funct.	THI Emot.	THI Catastr.	RAND-36 Mental H	Cantril's Ladder	HADS Anxiety	HADS Depression
Intrusive		+					
Control			+				
Cognitive	+			0	0	0	0
Sleep	+			0	0	0	0
Auditory	+			0	0	0	0
Relaxation	+					+	
QoL	+	+		-	-		+
Emotional		+		-	-	+	+

+ = expected positive correlation      - = expected negative correlation  
0 = no association expected

TABLE 3. Correlations between TFI, THI, and measures of psychological functioning

TFI	THI Funct.	THI Emot.	THI Catastr.	RAND-36 Mental H	Cantril's Ladder	HADS Anxiety	HADS Depression
Intrusive		.50**					
Control			.56**				
Cognitive	.78**			-.51**	-.53**	.56**	.52**
Sleep	.59**			-.36**	-.34**	.41**	.37**
Auditory	.44**			-.15*	-.17**	.26**	.20**
Relaxation	.67**					.59**	
QoL	.79**	.72**		-.60**	-.61**		.54**
Emotional		.79**		-.69**	-.62**	.65**	.65**

\* =  $p < .05$       \*\* =  $p < .001$       Convergent validity: positive correlations in blue, negative correlations in red. Divergent correlations in green.

